Sterigenics.
A Sotera Health company

COPY

June 5, 2018

Division of Air Pollution Control-Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62702

Re: Construction Permit Application for Sterigenics Willowbrook I and II Facility I.D. No: 043110AAC

To Whom It May Concern:

Enclosed please find a Construction Permit Application to route the existing back vents on our commercial sterilization units to existing emissions control equipment in our Willowbrook facility. We are requesting this modification to reduce our emissions of Ethylene Oxide (EO) and Propylene Oxide (PO). We have determined that the proposed emissions reduction will reduce our potential to emit to less than major source status.

The Willowbrook I sterilization chambers (SC-1, SC-2, SC-3 and SC-5) and Willowbrook II sterilization chambers (SC-4) exhaust via a vacuum pump and backvents. The backvent emissions are exhausted uncontrolled to atmosphere as allowed. This modification requests to duct these existing backvents to existing emission control devices and to reduce the emission limits to reflect potential emissions. In addition, the current emission limit for Willowbrook I Aeration room exceeds potential to emit and this modification requests this emission limit to reflect potential emissions.

We therefore request the agency's approval to connect our existing backvents to the existing emissions control devices in Willowbrook I and II and reduce our emission limitations to reflect potential to emit. Enclosed are the necessary forms/descriptions of the process and emissions. We have also enclosed a check for five hundred dollars ($500) along with the Fee Determination Form 197. Please do not hesitate to contact me to further discuss this matter. You can reach me at 630-928-1724 or email: lhartman@sterigenics.com.

Best Regards,

Laura Hartman

Laura Hartman
Manager EH&S

Enclosures:

2015 Spring Road Ste 650 Oak Brook, IL 60523
630.928.1700 | sterigenics.com

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Construction Permit Application for a Proposed Project at a CAAPP Source	For Illinois EPA use only
	ID No.:
	Appl. No.:
	Date Rec'd:
	Chk No./Amt:

This form is to be used to supply general information to obtain a construction permit for a proposed project involving a Clean Air Act Permit Program (CAAPP) source, including construction of a new CAAPP source. Detailed information about the project must also be included in a construction permit application, as addressed in the "General Instructions For Permit Applications," Form APC-201.

Proposed Project

1. Working Name of Proposed Project:
Sterilizer Back Vent Emissions Control

2. Is the project occurring at a source that already has a permit from the Bureau of Air (BOA)?
☐ No ☒ Yes If Yes, provide BOA ID Number: 043110AAC

3. Does this application request a revision to an existing construction permit issued by the BOA?
☐ No ☒ Yes If Yes, provide Permit Number: 11050010&05120010

4. Brief Description of Proposed Project:
Modify the duct for the existing back vents to route emissions to existing scrubbers with dry beds. Currently the back vent emissions are uncontrolled and exhausted directly to atmosphere. Also update the emission limits to match the new potential to emit based on controlled emissions.

Source Information

1. Source name:* Sterigenics US, LLC

2. Source street address:* 7775 Quincy Street and 830 Midway

3. City: Willowbrook	4. County: DuPage	5. Zip code:* 60521

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.

6. Is the source located within city limits? ☒ Yes ☐ No
If no, provide Township Name:

7. Description of source and product(s) produced: Commercial Sterilizer of medical products and spices.	8. Primary Classification Code of source: SIC: 7389 or NAICS: 561910
9. Latitude (DD:MM:SS.SSSS):	10. Longitude (DD:MM:SS.SSSS):

* Is information different than previous information? ☐ Yes ☐ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Identification of Permit Applicant

1. Who is the applicant? ☒ Owner ☐ Operator	2. All correspondence to: (check one) ☐ Source ☒ Owner ☐ Operator
3. Applicant's FEIN: 95-3323502	4. Attention name and/or title for written correspondence: Laura Hartman, EHS Manager

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Owner Information*

1. Name: Sterigenics US, LLC

2. Address: 2015 Spring Road , Suite 650

3. City:	4. State:	5. Zip code:
Oak Brook	IL	60523

* Is this information idifferent than previous information? ☐ Yes ☒ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Operator Information (if different from owner)*

1. Name Sterigenics US, LLC

2. Address: 7775 Quincy Street and 830 Midway

3. City:	4. State:	5. Zip code:
Willowbrook	IL	60523

* Is this information different than previous information? ☐ Yes ☐ No
If yes, then complete Form CAAPP 273 to apply for an Administrative Change to the CAAPP Permit for the source.

Technical Contacts for Application

1. Preferred technical contact: (check one) ☒ Applicant's contact ☐ Consultant

2. Applicant's technical contact person for application:
Laura Hartman

3. Contact person's telephone number(s)	4. Contact person's e-mail address:
630-928-1724	lhartman@sterigenics.com

5. Consultant for application:
n/a

6. Consultant's telephone number(s):	7. Consultant's e-mail address:
n/a	n/a

Other Addresses for the Permit Applicant

ONLY COMPLETE THE FOLLOWING FOR A SOURCE WITHOUT AN ID NUMBER.

1. Address for billing Site Fees for the source: ☐ Source ☐ Other (provide below):

2. Contact person for Site Fees:	3. Contact person's telephone number:

4. Address for Annual Emission Report for the source: ☐ Source ☐ Other (provide below):

5. Contact person for Annual Emission Report:	6. Contact person's telephone number:

Review Of Contents of the Application	
NOTE: ANSWERING "NO" TO THESE ITEMS MAY RESULT IN THE APPLICATION BEING DEEMED INCOMPLETE	
1. Does the application include a narrative description of the proposed project?	☒ Yes ☐ No
2. Does the application clearly identify the emission units and air pollution control equipment that are part of the project?	☒ Yes ☐ No
3. Does the application include process flow diagram(s) for the project showing new and modified emission units and control equipment, along with associated existing equipment and their relationships?	☒ Yes ☐ No
4. Does the application include a general description of the source, a plot plan for the source and a site map for its location?	☐ Yes ☐ No ☒ N/A* * Material previously provided
5. Does the application include relevant technical information for the proposed project as requested on CAAPP application forms (or otherwise contain all relevant technical information)?	☒ Yes ☐ No
6. Does the application include relevant supporting data and information for the proposed project as provided on CAAPP forms?	☒ Yes ☐ No
7. Does the application identify and address all applicable emission standards for the proposed project, including: State emission standards (35 IAC Chapter I, Subtitle B); Federal New Source Performance Standards (40 CFR Part 60)?	☒ Yes ☐ No
8. Does the application address whether the project would be a major project for Prevention of Significant Deterioration, 40 CFR 52.21?	☒ Yes ☐ No ☐ N/A
9. Does the application address whether the project would be a major project for "Nonattainment New Source Review," 35 IAC Part 203?	☒ Yes ☐ No ☐ N/A
10. Does the application address whether the proposed project would potentially be subject to federal regulations for Hazardous Air Pollutants (40 CFR Part 63) and address any emissions standards for hazardous air pollutants that would be applicable?	☒ Yes ☐ No ☐ N/A* * Source not major ☐ Project not major ☒
11. Does the application include a summary of annual emission data for different pollutants for the proposed project (tons/year), including: 1) The requested permitted emissions for individual new, modified and affected existing units*, 2) The past actual emissions and change in emissions for individual modified units* and affected existing units*, and 3) Total emissions consequences of the proposed project? (* Or groups of related units)	☒ Yes ☐ No ☐ N/A * The project does not involve an increase in emissions from new or modified emission units.
12. Does the application include a summary of the current and requested potential emissions of the source (tons/year)?	☒ Yes ☐ No ☐ N/A* * Applicability of PSD, NA NSR or 40 CFR 63 to the project is not related to the source's emissions.
13. Does the application address the relationships and implications of the proposed project on the CAAPP Permit for the source?	☒ Yes ☐ No ☐ N/A* * CAAPP Permit not issued
14. If the application contains information that is considered a TRADE SECRET, has it been properly marked and claimed and all requirements to properly support the claim pursuant to 35 IAC Part 130 been met? Note: "Claimed" information will not be legally protected from disclosure to the public if it is not properly claimed or does not qualify as trade secret information.	☐ Yes ☐ No ☒ N/A* * No information in the application is claimed to be a TRADE SECRET
15. Are the correct number of copies of the application provided? (See Instructions for Permit Applications, Form 201)	☒ Yes ☐ No
16. Does the application include a completed "FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION," Form 197-FEE, a check in the amount indicated on this form, and any supporting material needed to explain how the fee was determined?	☒ Yes ☐ No

Signature Block

Authorized Signature:

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete and that I am a responsible official for the source, as defined by Section 39.5(1) of the Environmental Protection Act.

BY: Kathleen Hoffman — VP of EH&S

AUTHORIZED SIGNATURE — TITLE OF SIGNATORY

Kathleen Hoffman — 05 - June - 2018

TYPED OR PRINTED NAME OF SIGNATORY — DATE

Table of Contents

Sterilizer Back Vent Emissions Control

EXHIBIT 199-1

NARRATIVE DESCRIPTION OF PROPOSED PROJECT– BACKVENT CONTROL

The facility is a medical sterilization facility located at 7775 Quincy Street (WBI) and 830 Midway (WBII), Willowbrook, Illinois.

The sterilization facility utilizes ethylene oxide (EO) as the principle sterilant gas, although propylene oxide is sometimes used. All associated equipment and processing areas associated with sterilant use are covered under our current CAAPP Permit #95120085.

As part of the sterilization process, products are sterilized in one of the sterilization chambers. The sterilization chambers exhaust the majority of emissions through the vacuum pumps and the vacuum pump emissions are controlled by existing scrubbers. The remaining emissions from the sterilization chambers are exhausted, uncontrolled, to atmosphere through back vents.

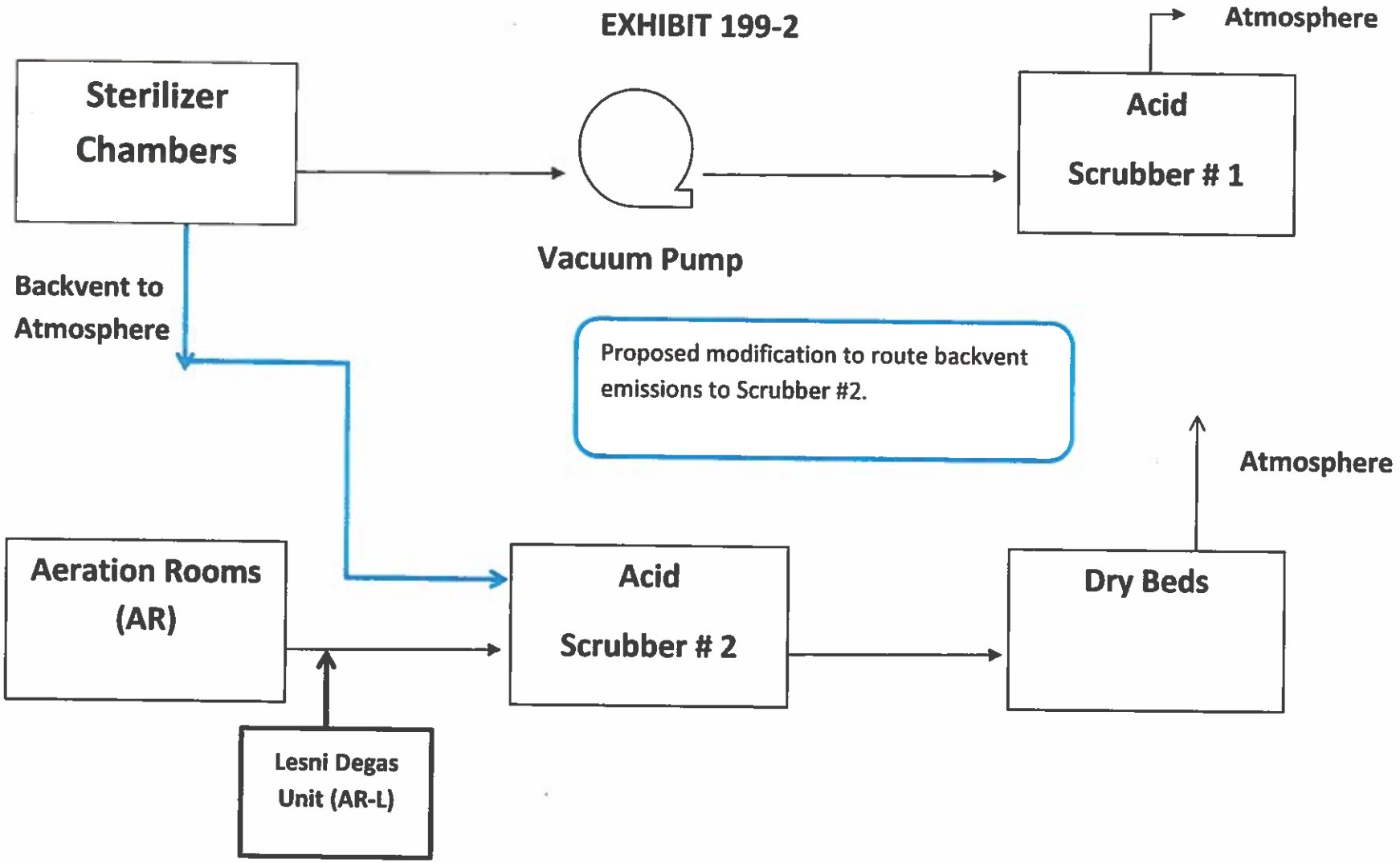
Once the sterilization chamber process is complete, the products are removed from the sterilization chamber and placed into aeration rooms to further off gas low levels of EO. The aeration rooms exhaust emissions to existing acid scrubbers with dry bed reactors.

This permit application is requesting to duct the back vent emissions of the permitted chambers to the existing acid scrubbers with dry bed reactors. In Willowbrook I, the back vents for emission units SC-1, 2, 3, and 5 would be ducted to the existing Advanced Air Technologies (AAT) wet acid scrubber with dry bed reactor (Scrubber #2). In Willowbrook II, the back vents for emission units SC-4 would be ducted to the existing WB II Advanced Air Technologies (AAT) wet acid scrubber with dry bed reactor (WBII-Scrubbers).

In addition, this permit application is requesting to modify the existing EO and Volatile Organic Material (VOM) emission limits to align with the potential emissions. Emission calculations are enclosed and include 2017 emissions and potential emissions based on current EO and VOM usage limitations. Please refer to the emissions table in Exhibit 220A and 220B.

This proposed project would reduce the uncontrolled EO emissions from the back vents by a control efficiency of at least 99%, and therefore would not be a major modification pursuant to 40 CFR 52.21 or 35 IAC Part 203. Also, the modification would reduce the potential emissions of Hazardous Air Pollutants to less than 10 tons per year and therefore, the facility would no longer be considered a major source under CAAPP regulations.

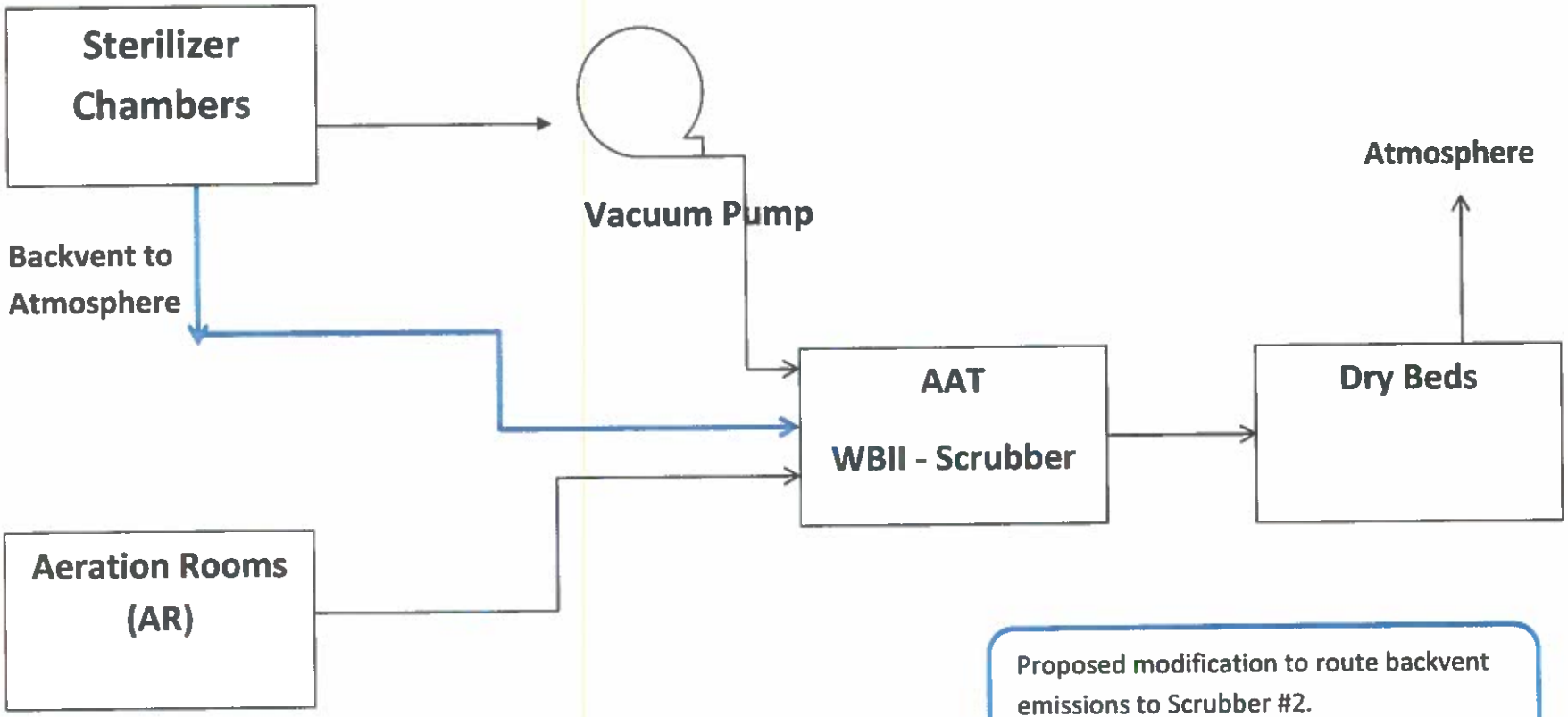
EXHIBIT 199-2



Willowbrook I EO Process Flow Diagram June 2018

With Proposed Change noted in Blue

EXHIBIT 199-3



Willowbrook II EO Process Flow Diagram June 2018

With Proposed Change noted in Blue

List of Emission Units Covered in Permit Application

A permit exists for the emission units referred to in this permit application. This permit application requests to duct existing backvents from the Willowbrook I and II Sterilization Chambers listed below to existing control devices. In addition, this permit application requests to modify the emission limits for the Willowbrook I and II Sterilization Chambers and Willowbrook I Aeration Room listed below to reflect potential emissions.

List of Sterilization Chambers to duct backvent to existing controls:

1. WB1 SC1 – Six 6-pallet Chambers
2. WB1 SC2 – Six 13-pallet Chambers
3. WB1 SC3 – One 3 pallet Chamber
4. WB1 SC5 – One 1 pallet Chamber
5. WB2 SC4 – Three 13 pallet and One 26 pallet Chamber

List of emission units to modify permitted emission limits:

1. WB1 SC1 – Six 6-pallet Chambers
2. WB1 SC2 – Six 13-pallet Chambers
3. WB1 SC3 – One 3 pallet Chamber
4. WB1 SC5 – One 1 pallet Chamber
5. WB1 AR – Three Aeration Rooms
6. WB2 SC4 – Three 13 pallet and One 26 pallet Chamber

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation:
_____

PROCESS EMISSION UNIT DATA AND INFORMATION	***FOR AGENCY USE ONLY***
	ID NUMBER:
	EMISSION POINT #:
	DATE:

SOURCE INFORMATION	
1) SOURCE NAME: Sterigenics US, LLC	
2) DATE FORM PREPARED: 30 May 2018	3) SOURCE ID NO. (IF KNOWN): 043110AAC

GENERAL INFORMATION	
4) NAME OF EMISSION UNIT: (6) Ethylene Oxide/Propylene oxide Sterilization Chambers (6 pallet capacity) SC-1	
5) NAME OF PROCESS: Sterilization of medical products and spices	
6) DESCRIPTION OF PROCESS: Chemical Sterilization	
7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED: Sterilized Medical Supplies and Treated Spices	
8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT: Sterilizer Chambers	
9) MANUFACTURER OF EMISSION UNIT (IF KNOWN): Unknown	
10) MODEL NUMBER (IF KNOWN): unknown	11) SERIAL NUMBER (IF KNOWN): unknown
12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)	a) CONSTRUCTION (MONTH/YEAR): June 1984
	b) OPERATION (MONTH/YEAR): May 1985
	c) LATEST MODIFICATION (MONTH/YEAR): November 1990
13) DESCRIPTION OF MODIFICATION (IF APPLICABLE): The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber exhaust vent currently exhausts uncontrolled to atmosphere. This modification proposes to control the backvent with scrubber #2 and dry bed reactor.	

FOR APPLICANT'S USE
_____

14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☒ YES ☐ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 220-CAAPP MUST BE COMPLETED FOR EACH MODE):

The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber backvent modification is covered by this form. The chamber vent is controlled by WB1 Acid Scrubber 1 and remains unchanged.

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

The chamber backvent is currently uncontrolled. This application proposes to duct the chamber exhaust vent (backvent) to the existing Acid Scrubber (scrubber #2) with Dry Bed Reactor. The information provided below is required for the existing control device.

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

Monthly usage limitations for propylene oxide and ethylene oxide shall not exceed 2800 pounds and 70,000 pounds respectively for all emission units in Willowbrook I.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 220-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS 8760 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
b) TYPICAL OPERATING HOURS 8600 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
20) ANNUAL THROUGHPUT	DEC-FEB(%): 25	MAR-MAY(%): 25	JUN-AUG(%): 25	SEP-NOV(%): 25

MATERIAL USAGE INFORMATION

	MAXIMUM RATES		TYPICAL RATES	
21a) RAW MATERIALS	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
Ethylene Oxide		420		
Propylene oxide		17		

APPLICATION PAGE \\

Printed on Recycled Paper
220-CAAPP

21b) PRODUCTS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

21c) BY-PRODUCT MATERIALS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

FUEL USAGE DATA

22a) MAXIMUM FIRING RATE (MILLION BTU/HR):	b) TYPICAL FIRING RATE (MILLION BTU/HR):	c) DESIGN CAPACITY FIRING RATE (MILLION BTU/HR):
N/A	N/A	N/A

d) FUEL TYPE:

☐ NATURAL GAS ☐ FUEL OIL: GRADE NUMBER _____ ☐ COAL ☐ OTHER _____

IF MORE THAN ONE FUEL IS USED, ATTACH AN EXPLANATION AND LABEL AS EXHIBIT 220-2.

e) TYPICAL HEAT CONTENT OF FUEL (BTU/LB, BTU/GAL OR BTU/SCF):	f) TYPICAL SULFUR CONTENT (WT %., NA FOR NATURAL GAS):
g) TYPICAL ASH CONTENT (WT %., NA FOR NATURAL GAS):	h) ANNUAL FUEL USAGE (SPECIFY UNITS, E.G., SCF/YEAR, GAL/YEAR, TON/YEAR):

23) ARE COMBUSTION EMISSIONS DUCTED TO THE SAME STACK OR CONTROL AS PROCESS UNIT EMISSIONS? ☐ YES ☐ NO

IF NO, IDENTIFY THE EXHAUST POINT FOR COMBUSTION EMISSIONS:

APPLICABLE RULES

24) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., VOM, IAC 218.204(j)(4), 3.5 LBS/GAL):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)
VOM (WB1 Scrubber 2)	35 IAC 218.302(b)	At least 85% recovery of total uncontrolled org. mat.
HAP (WB1 Scrubber 2)	40CFR 63.362	99% reduction or 1 ppm outlet

25) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

26) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

27) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)
HAP monitoring applies to	40CFR 63.364	Weekly Scrubber liquor level
WB1 Scrubber 2 and dry beds	40CFR 63.364	Weekly EO concentration from dry beds

28) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT :

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)
HAP applies to WB1 Scrubber 2	40 CFR63.365	Testing of control equipment

29) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 220-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

30) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE -- ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

31) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Ethylene Oxide and Propylene oxide usage is tracked monthly.
WB Scrubber 2 was tested January 23, 2003

32) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Records of Ethylene Oxide (EO) and Propylene Oxide (PO) usage. (monthly)
WB1 Scrubber 2 is required to monitor scrubber liquor level weekly, pH weekly.
EO concentration is checked weekly to determine proper operation of the Dry Bed Unit.

TESTING, MONITORING, RECORDKEEPING AND REPORTING

33a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
Sterilant Usage	pounds	Operating data	monthly
Liquor level	inches	Operating data	weekly
EO conc	ppm	GLC from dry bed	weekly

33b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
Sterilant usage	Operating report	General Manager	EH&S
Liquor Level	PM records	General Manager	EH&S
EO conc	PM Records	General Manager	EH&S

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

34a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

Monitor and record the level of the scrubber liquor in recirculation tank.
Monitor the EtO concentration entering and exiting the AATDry Beds.

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., VOM EMISSIONS TO ATMOSPHERE)?

Level of scrubber liquor.
EtO levels from the AAT Dry Beds.

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR 3 FEET FROM EXIT):

34d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☒ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

Records are kept manually

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

N/A

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☒ NO

IF NO, EXPLAIN:

No continuous monitoring is required.

35) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 220-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
1/21/03		Kremer Env.	Normal	> 99% efficiency

36) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
Annual emissions report	Annual emissions report	annual (per Title V)
Excess emissions	Excess emissions	semi-annual

(37)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )				
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:	see Ex					( )				
	TYPICAL:	220-B					( )				
OTHER, SPECIFY: _____	MAXIMUM:	See Ex.					( )				
	TYPICAL:	220-B					( )				
EXAMPLE: PARTICULATE MATTER	*MAXIMUM:*	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-5.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

(38) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

☐ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE [5]RATE OR STANDARD	ALLOWABLE BY RULE APPLICABLE RULE
Ethylene Oxide	75-21-8	MAXIMUM:	See Exhibit	220-A & B				
		TYPICAL:						
Propylene Oxide	75-56-9	MAXIMUM:	See Exhibit	220-A & B				
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

39) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:
WB1 Scrubber #2 with dry bed

40) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.
Outside Stack

41) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):
approx 20 feet

42) DISCHARGE HEIGHT ABOVE GRADE (FT):
approx 30 feet

43) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):
Unknown

44) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA. 24 inches

45) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM): 15,500	b) TYPICAL (ACFM): 15,500
46) EXIT GAS TEMPERATURE	a) MAXIMUM (°F): approx 75	b) TYPICAL (°F): approx 75

47) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):
Vertical

48) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)	Aeration Rooms (current)	AR
b)	Sterilizer Backvent SC1, SC2, SC3, SC4	Backvent
c)	Backup for Sterlizer Chambers SC1-4	vacuum pump
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

49a) LATITUDE:	b) LONGITUDE:	
50) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation:
_____

PROCESS EMISSION UNIT DATA AND INFORMATION

FOR AGENCY USE ONLY
ID NUMBER:
EMISSION POINT #:
DATE:

SOURCE INFORMATION

1) SOURCE NAME:
Sterigenics US, LLC

2) DATE FORM PREPARED: 30 May 2018

3) SOURCE ID NO. (IF KNOWN): 043110AAC

GENERAL INFORMATION

4) NAME OF EMISSION UNIT:
(6) Ethylene Oxide/Propylene oxide Sterilization Chambers (13 pallet capacity) SC-2

5) NAME OF PROCESS:
Sterilization of medical products and spices

6) DESCRIPTION OF PROCESS:
Chemical Sterilization

7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED:
Sterilized Medical Supplies and Treated Spices

8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT:
Sterilizer Chambers

9) MANUFACTURER OF EMISSION UNIT (IF KNOWN):
Unknown

10) MODEL NUMBER (IF KNOWN):
unknown

11) SERIAL NUMBER (IF KNOWN):
unknown

12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)

a) CONSTRUCTION (MONTH/YEAR):
June 1984

b) OPERATION (MONTH/YEAR):
May 1985

c) LATEST MODIFICATION (MONTH/YEAR):
November 1990

13) DESCRIPTION OF MODIFICATION (IF APPLICABLE):
The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber exhaust vent currently exhausts uncontrolled to atmosphere. This modification proposes to control the backvent with scrubber #2 and dry bed reactor.

FOR APPLICANT'S USE
_____

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14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☒ YES ☐ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 220-CAAPP MUST BE COMPLETED FOR EACH MODE):

The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber backvent modification is covered by this form. The chamber vent is controlled by WB1 Acid Scrubber 1 and remains unchanged.

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

The chamber backvent is currently uncontrolled. This application proposes to duct the chamber exhaust vent (backvent) to the existing Acid Scrubber (scrubber #2) with Dry Bed Reactor. The information provided below is required for the existing control device.

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

Monthly usage limitations for propylene oxide and ethylene oxide shall not exceed 2800 pounds and 70,000 pounds respectively for all emission units in Willowbrook I.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 220-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS 8760 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
b) TYPICAL OPERATING HOURS 8600 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
20) ANNUAL THROUGHPUT	DEC-FEB(%): 25	MAR-MAY(%): 25	JUN-AUG(%): 25	SEP-NOV(%): 25

MATERIAL USAGE INFORMATION

	MAXIMUM RATES		TYPICAL RATES	
21a) RAW MATERIALS	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
Ethylene Oxide		420		
Propylene oxide		17		

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220-CAAPP

21b) PRODUCTS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

21c) BY-PRODUCT MATERIALS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

FUEL USAGE DATA

22a) MAXIMUM FIRING RATE (MILLION BTU/HR):	b) TYPICAL FIRING RATE (MILLION BTU/HR):	c) DESIGN CAPACITY FIRING RATE (MILLION BTU/HR):
N/A	N/A	N/A

d) FUEL TYPE:

☐ NATURAL GAS ☐ FUEL OIL: GRADE NUMBER _____ ☐ COAL ☐ OTHER _____

IF MORE THAN ONE FUEL IS USED, ATTACH AN EXPLANATION AND LABEL AS EXHIBIT 220-2.

e) TYPICAL HEAT CONTENT OF FUEL (BTU/LB, BTU/GAL OR BTU/SCF):	f) TYPICAL SULFUR CONTENT (WT %., NA FOR NATURAL GAS):
g) TYPICAL ASH CONTENT (WT %., NA FOR NATURAL GAS):	h) ANNUAL FUEL USAGE (SPECIFY UNITS, E.G., SCF/YEAR, GAL/YEAR, TON/YEAR):

23) ARE COMBUSTION EMISSIONS DUCTED TO THE SAME STACK OR CONTROL AS PROCESS UNIT EMISSIONS? ☐ YES ☐ NO

IF NO, IDENTIFY THE EXHAUST POINT FOR COMBUSTION EMISSIONS:

APPLICABLE RULES

24) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., VOM, IAC 218.204(j)(4), 3.5 LBS/GAL):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)
VOM (WB1 Scrubber 2)	35 IAC 218.302(b)	At least 85% recovery of total uncontrolled org. mat.
HAP (WB1 Scrubber 2)	40CFR 63.362	99% reduction or 1 ppm outlet

25) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

26) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

27) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)
HAP monitoring applies to	40CFR 63.364	Weekly Scrubber liquor level
WB1 Scrubber 2 and dry beds	40CFR 63.364	Weekly EO concentration from dry beds

28) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)
HAP applies to WB1 Scrubber 2	40 CFR63.365	Testing of control equipment

29) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 220-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

30) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE -- ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

31) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Ethylene Oxide and Propylene oxide usage is tracked monthly.
WB Scrubber 2 was tested January 23, 2003

32) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Records of Ethylene Oxide (EO) and Propylene Oxide (PO) usage. (monthly)
WB1 Scrubber 2 is required to monitor scrubber liquor level weekly, pH weekly.
EO concentration is checked weekly to determine proper operation of the Dry Bed Unit.

TESTING, MONITORING, RECORDKEEPING AND REPORTING

33a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
Sterilant Usage	pounds	Operating data	monthly
Liquor level	inches	Operating data	weekly
EO conc	ppm	GLC from dry bed	weekly

33b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
Sterilant usage	Operating report	General Manager	EH&S
Liquor Level	PM records	General Manager	EH&S
EO conc	PM Records	General Manager	EH&S

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

34a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

Monitor and record the level of the scrubber liquor in recirculation tank.
Monitor the EtO concentration entering and exiting the AATDry Beds.

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., VOM EMISSIONS TO ATMOSPHERE)?

Level of scrubber liquor.
EtO levels from the AAT Dry Beds.

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR 3 FEET FROM EXIT):

34d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☒ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

N/A

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

N/A

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☒ NO

IF NO, EXPLAIN:

No continuous monitoring is required.

35) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 220-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
1/21/03		Kremer Env.	Normal	> 99% efficiency

36) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
Annual emissions report	Annual emissions report	annual (per CAAPP)
Excess emissions	Excess emissions	semi-annual

(37)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )				
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:						( )				
	TYPICAL:						( )				
OTHER, SPECIFY: _____	MAXIMUM:	See Ex.	220-A&B				( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-5.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

(38) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

☐ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE: [5]RATE OR STANDARD	ALLOWABLE BY RULE: APPLICABLE RULE
Ethylene Oxide	75-21-8	MAXIMUM:	See Exhibit	220-A&B				
		TYPICAL:						
Propylene Oxide	75-56-9	MAXIMUM:	See Exhibit	220-A&B				
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
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[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

39) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:
WB1 Scrubber #2 with dry bed

40) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.
Outside Stack

41) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):
approx 20 feet

42) DISCHARGE HEIGHT ABOVE GRADE (FT):
approx 30 feet

43) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):
Unknown

44) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA. 24 inches

45) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM): 15,500	b) TYPICAL (ACFM): 15,500
46) EXIT GAS TEMPERATURE	a) MAXIMUM (°F): approx 75	b) TYPICAL (°F): approx 75

47) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):
Vertical

48) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)	Aeration Rooms (current)	AR
b)	Sterilizer Backvent SC1, SC2, SC3, SC4	Backvent
c)	Backup for Sterlizer Chambers SC1-4	vacuum pump
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

49a) LATITUDE:	b) LONGITUDE:	
50) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation:

PROCESS EMISSION UNIT DATA AND INFORMATION

FOR AGENCY USE ONLY
ID NUMBER:
EMISSION POINT #:
DATE:

SOURCE INFORMATION

1) SOURCE NAME:
Sterigenics US, LLC

2) DATE FORM PREPARED: 30 May 2018

3) SOURCE ID NO. (IF KNOWN): 043110AAC

GENERAL INFORMATION

4) NAME OF EMISSION UNIT:
(1) Ethylene Oxide/Propylene oxide Sterilization Chambers (3 pallet capacity) SC-3

5) NAME OF PROCESS:
Sterilization of medical products and spices

6) DESCRIPTION OF PROCESS:
Chemical Sterilization

7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED:
Sterilized Medical Supplies and Treated Spices

8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT:
Sterilizer Chambers

9) MANUFACTURER OF EMISSION UNIT (IF KNOWN):
Unknown

10) MODEL NUMBER (IF KNOWN):
unknown

11) SERIAL NUMBER (IF KNOWN):
unknown

12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)

a) CONSTRUCTION (MONTH/YEAR):
June 1984

b) OPERATION (MONTH/YEAR):
May 1985

c) LATEST MODIFICATION (MONTH/YEAR):
November 1990

13) DESCRIPTION OF MODIFICATION (IF APPLICABLE):
The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber exhaust vent currently exhausts uncontrolled to atmosphere. This modification proposes to control the backvent with scrubber #2 and dry bed reactor.

FOR APPLICANT'S USE

14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☒ YES ☐ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 220-CAAPP MUST BE COMPLETED FOR EACH MODE):

The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber backvent modification is covered by this form. The chamber vent is controlled by WB1 Acid Scrubber 1 and remains unchanged.

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

The chamber backvent is currently uncontrolled. This application proposes to duct the chamber exhaust vent (backvent) to the existing Acid Scrubber (scrubber #2) with Dry Bed Reactor. The information provided below is required for the existing control device.

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

Monthly usage limitations for propylene oxide and ethylene oxide shall not exceed 2800 pounds and 70,000 pounds respectively for all emission units in Willowbrook I.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 220-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS 8760 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
b) TYPICAL OPERATING HOURS 8600 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
20) ANNUAL THROUGHPUT	DEC-FEB(%): 25	MAR-MAY(%): 25	JUN-AUG(%): 25	SEP-NOV(%): 25

MATERIAL USAGE INFORMATION

	MAXIMUM RATES		TYPICAL RATES	
21a) RAW MATERIALS	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
Ethylene Oxide		420		
Propylene oxide		17		

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21b) PRODUCTS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

21c) BY-PRODUCT MATERIALS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

FUEL USAGE DATA

22a) MAXIMUM FIRING RATE (MILLION BTU/HR):	b) TYPICAL FIRING RATE (MILLION BTU/HR):	c) DESIGN CAPACITY FIRING RATE (MILLION BTU/HR):
N/A	N/A	N/A

d) FUEL TYPE:

☐ NATURAL GAS ☐ FUEL OIL: GRADE NUMBER _____ ☐ COAL ☐ OTHER _____

IF MORE THAN ONE FUEL IS USED, ATTACH AN EXPLANATION AND LABEL AS EXHIBIT 220-2.

e) TYPICAL HEAT CONTENT OF FUEL (BTU/LB, BTU/GAL OR BTU/SCF):	f) TYPICAL SULFUR CONTENT (WT %., NA FOR NATURAL GAS):
g) TYPICAL ASH CONTENT (WT %., NA FOR NATURAL GAS):	h) ANNUAL FUEL USAGE (SPECIFY UNITS, E.G., SCF/YEAR, GAL/YEAR, TON/YEAR):

23) ARE COMBUSTION EMISSIONS DUCTED TO THE SAME STACK OR CONTROL AS PROCESS UNIT EMISSIONS? ☐ YES ☐ NO

IF NO, IDENTIFY THE EXHAUST POINT FOR COMBUSTION EMISSIONS:

APPLICABLE RULES

24) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., VOM, IAC 218.204(j)(4), 3.5 LBS/GAL):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)
VOM (WB1 Scrubber 2)	35 IAC 218.302(b)	At least 85% recovery of total uncontrolled org. mat.
HAP (WB1 Scrubber 2)	40CFR 63.362	99% reduction or 1 ppm outlet

25) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

26) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

27) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)
HAP monitoring applies to	40CFR 63.364	Weekly Scrubber liquor level
WB1 Scrubber 2 and dry beds	40CFR 63.364	Weekly EO concentration from dry beds

28) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT :

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)
HAP applies to WB1 Scrubber 2	40 CFR63.365	Testing of control equipment

29) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 220-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

30) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE -- ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

31) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Ethylene Oxide and Propylene oxide usage is tracked monthly.
WB Scrubber 2 was tested January 23, 2003

32) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Records of Ethylene Oxide (EO) and Propylene Oxide (PO) usage. (monthly)
WB1 Scrubber 2 is required to monitor scrubber liquor level weekly, pH weekly.
EO concentration is checked weekly to determine proper operation of the Dry Bed Unit.

TESTING, MONITORING, RECORDKEEPING AND REPORTING

33a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
Sterilant Usage	pounds	Operating data	monthly
Liquor level	inches	Operating data	weekly
EO conc	ppm	GLC from dry bed	weekly

33b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
Sterilant usage	Operating report	General Manager	EH&S
Liquor Level	PM records	General Manager	EH&S
EO conc	PM Records	General Manager	EH&S

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

34a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

Monitor and record the level of the scrubber liquor in recirculation tank.
Monitor the EtO concentration entering and exiting the AATDry Beds.

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., VOM EMISSIONS TO ATMOSPHERE)?

Level of scrubber liquor.
EtO levels from the AAT Dry Beds.

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR 3 FEET FROM EXIT):

34d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

N/A

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

N/A

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☒ NO

IF NO, EXPLAIN:

No continuous monitoring is required.

35) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 220-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
1/21/03		Kremer Env.	Normal	> 99% efficiency

36) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
Annual emissions report	Annual emissions report	annual
Excess emissions	Excess emissions	semi-annual

(37)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )				
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:						( )				
	TYPICAL:						( )				
OTHER, SPECIFY: _____	MAXIMUM:	See Ex.	220-a				( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-5.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

(38) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

☐ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE: [5]RATE OR STANDARD	ALLOWABLE BY RULE: APPLICABLE RULE
Ethylene Oxide	75-21-8	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
Propylene Oxide	75-56-9	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

39) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:
WB1 Scrubber #2 with dry bed

40) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.
Outside Stack

41) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):
approx 20 feet

42) DISCHARGE HEIGHT ABOVE GRADE (FT):
approx 30 feet

43) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):
Unknown

44) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA. 24 inches

45) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM): 15,500	b) TYPICAL (ACFM): 15,500
46) EXIT GAS TEMPERATURE	a) MAXIMUM (°F): approx 75	b) TYPICAL (°F): approx 75

47) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):
Vertical

48) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)	Aeration Rooms (current)	AR
b)	Sterilizer Backvent SC1, SC2, SC3, SC4	Backvent
c)	Backup for Sterlizer Chambers SC1-4	vacuum pump
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

49a) LATITUDE:	b) LONGITUDE:	
50) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation:
_____

PROCESS EMISSION UNIT DATA AND INFORMATION

FOR AGENCY USE ONLY
ID NUMBER:
EMISSION POINT #:
DATE:

SOURCE INFORMATION

1) SOURCE NAME:
Sterigenics US, LLC

2) DATE FORM PREPARED: 30 May 2018

3) SOURCE ID NO. (IF KNOWN): 043110AAC

GENERAL INFORMATION

4) NAME OF EMISSION UNIT:
(1) Ethylene Oxide/Propylene oxide Sterilization Chambers (1 pallet capacity) SC-5

5) NAME OF PROCESS:
Sterilization of medical products and spices

6) DESCRIPTION OF PROCESS:
Chemical Sterilization

7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED:
Sterilized Medical Supplies and Treated Spices

8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT:
Sterilizer Chambers

9) MANUFACTURER OF EMISSION UNIT (IF KNOWN):
Unknown

10) MODEL NUMBER (IF KNOWN):
unknown

11) SERIAL NUMBER (IF KNOWN):
unknown

12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)

a) CONSTRUCTION (MONTH/YEAR):
June 1984

b) OPERATION (MONTH/YEAR):
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c) LATEST MODIFICATION (MONTH/YEAR):
November 1990

13) DESCRIPTION OF MODIFICATION (IF APPLICABLE):
The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber exhaust vent currently exhausts uncontrolled to atmosphere. This modification proposes to control the backvent with scrubber #2 and dry bed reactor.

FOR APPLICANT'S USE
_____

14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☒ YES ☐ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 220-CAAPP MUST BE COMPLETED FOR EACH MODE):

The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber backvent modification is covered by this form. The chamber vent is controlled by WB1 Acid Scrubber 1 and remains unchanged.

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The chamber backvent is currently uncontrolled. This application proposes to duct the chamber exhaust vent (backvent) to the existing Acid Scrubber (scrubber #2) with Dry Bed Reactor. The information provided below is required for the existing control device.

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IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

Monthly usage limitations for propylene oxide and ethylene oxide shall not exceed 2800 pounds and 70,000 pounds respectively for all emission units in Willowbrook I.

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21b) PRODUCTS	MAXIMUM RATES		TYPICAL RATES	
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N/A				

21c) BY-PRODUCT MATERIALS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
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FUEL USAGE DATA

22a) MAXIMUM FIRING RATE (MILLION BTU/HR):	b) TYPICAL FIRING RATE (MILLION BTU/HR):	c) DESIGN CAPACITY FIRING RATE (MILLION BTU/HR):
N/A	N/A	N/A

d) FUEL TYPE:

☐ NATURAL GAS ☐ FUEL OIL: GRADE NUMBER _____ ☐ COAL ☐ OTHER _____

IF MORE THAN ONE FUEL IS USED, ATTACH AN EXPLANATION AND LABEL AS EXHIBIT 220-2.

e) TYPICAL HEAT CONTENT OF FUEL (BTU/LB, BTU/GAL OR BTU/SCF):	f) TYPICAL SULFUR CONTENT (WT %., NA FOR NATURAL GAS):
g) TYPICAL ASH CONTENT (WT %., NA FOR NATURAL GAS):	h) ANNUAL FUEL USAGE (SPECIFY UNITS, E.G., SCF/YEAR, GAL/YEAR, TON/YEAR):

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IF NO, IDENTIFY THE EXHAUST POINT FOR COMBUSTION EMISSIONS:

APPLICABLE RULES

24) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., VOM, IAC 218.204(j)(4), 3.5 LBS/GAL):

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REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WB1 Scrubber 2		

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REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)
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but do apply to WB1 Scrubber 2		

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HAP monitoring applies to	40CFR 63.364	Weekly Scrubber liquor level
WB1 Scrubber 2 and dry beds	40CFR 63.364	Weekly EO concentration from dry beds

28) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)
HAP applies to WB1 Scrubber 2	40 CFR63.365	Testing of control equipment

29) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 220-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

30) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE -- ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

31) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Ethylene Oxide and Propylene oxide usage is tracked monthly.
WB Scrubber 2 was tested January 23, 2003

32) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Records of Ethylene Oxide (EO) and Propylene Oxide (PO) usage. (monthly)
WB1 Scrubber 2 is required to monitor scrubber liquor level weekly, pH weekly.
EO concentration is checked weekly to determine proper operation of the Dry Bed Unit.

TESTING, MONITORING, RECORDKEEPING AND REPORTING

33a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
Sterilant Usage	pounds	Operating data	monthly
Liquor level	inches	Operating data	weekly
EO conc	ppm	GLC from dry bed	weekly

33b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
Sterilant usage	Operating report	General Manager	EH&S
Liquor Level	PM records	General Manager	EH&S
EO conc	PM Records	General Manager	EH&S

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

34a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

Monitor and record the level of the scrubber liquor in recirculation tank.
Monitor the EtO concentration entering and exiting the AATDry Beds.

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., VOM EMISSIONS TO ATMOSPHERE)?

Level of scrubber liquor.
EtO levels from the AAT Dry Beds.

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR 3 FEET FROM EXIT):

34d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

N/A

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

N/A

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☒ NO

IF NO, EXPLAIN:

No continuous monitoring is required.

35) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 220-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
1/21/03		Kremer Env.	Normal	> 99% efficiency

36) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
Annual emissions report	Annual emissions report	annual
Excess emissions	Excess emissions	semi-annual

(37)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )				
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:						( )				
	TYPICAL:						( )				
OTHER, SPECIFY: _____	MAXIMUM:	See Ex.	220-a				( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

(38) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

☐ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE: [5]RATE OR STANDARD	ALLOWABLE BY RULE: APPLICABLE RULE
Ethylene Oxide	75-21-8	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
Propylene Oxide	75-56-9	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

39) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:
WB1 Scrubber #2 with dry bed

40) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.
Outside Stack

41) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):
approx 20 feet

42) DISCHARGE HEIGHT ABOVE GRADE (FT):
approx 30 feet

43) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):
Unknown

44) DIAMETER OF EXHAUST POINT (FT). NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA. 24 inches

45) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM): 15,500	b) TYPICAL (ACFM): 15,500
46) EXIT GAS TEMPERATURE	a) MAXIMUM (°F): approx 75	b) TYPICAL (°F): approx 75

47) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):
Vertical

48) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)	Aeration Rooms (current)	AR
b)	Sterilizer Backvent SC1, SC2, SC3, SC5	Backvent
c)	Backup for Sterlizer Chambers SC1-3, 5	vacuum pump
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

49a) LATITUDE:	b) LONGITUDE:	
50) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation:
_____

PROCESS EMISSION UNIT DATA AND INFORMATION	***FOR AGENCY USE ONLY***
	ID NUMBER:
	EMISSION POINT #:
	DATE:

SOURCE INFORMATION	
1) SOURCE NAME: Sterigenics US, LLC	
2) DATE FORM PREPARED: 27 Dec 2017	3) SOURCE ID NO. (IF KNOWN): 043110AAC

GENERAL INFORMATION	
4) NAME OF EMISSION UNIT: WB1 (3) Aeration Rooms	
5) NAME OF PROCESS: Aeration of Sterilized medical products and spices	
6) DESCRIPTION OF PROCESS: Chemical Sterilization	
7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED: Sterilized Medical Supplies and Treated Spices	
8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT: Aeration Rooms	
9) MANUFACTURER OF EMISSION UNIT (IF KNOWN): Unknown	
10) MODEL NUMBER (IF KNOWN): unknown	11) SERIAL NUMBER (IF KNOWN): unknown
12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)	a) CONSTRUCTION (MONTH/YEAR): June 1984
	b) OPERATION (MONTH/YEAR): May 1985
	c) LATEST MODIFICATION (MONTH/YEAR): March 1998
13) DESCRIPTION OF MODIFICATION (IF APPLICABLE): The aeration rooms have an emission limit of 3.6 lbs/hr and 15.77 tons/year pursuant to construction permit 96120054. These emission limits exceed the potential emissions. This application requests the emission limits to align with the potential emissions.	

FOR APPLICANT'S USE
_____

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14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☐ YES ☒ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 220-CAAPP MUST BE COMPLETED FOR EACH MODE):

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

WB1 Acid Scrubber (scrubber #2) with Dry Bed Reactor.

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

Monthly usage limitations for propylene oxide and ethylene oxide shall not exceed 2800 pounds and 70,000 pounds respectively for all sterilization chambers in Willowbrook I. Potential emissions are calculated based on this usage.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 220-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS 8760 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
b) TYPICAL OPERATING HOURS 8600 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
20) ANNUAL THROUGHPUT	DEC-FEB(%): 25	MAR-MAY(%): 25	JUN-AUG(%): 25	SEP-NOV(%): 25

MATERIAL USAGE INFORMATION

	MAXIMUM RATES		TYPICAL RATES	
21a) RAW MATERIALS	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
Ethylene Oxide		420		
Propylene oxide		17		

21b) PRODUCTS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

21c) BY-PRODUCT MATERIALS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

FUEL USAGE DATA

22a) MAXIMUM FIRING RATE (MILLION BTU/HR):	b) TYPICAL FIRING RATE (MILLION BTU/HR):	c) DESIGN CAPACITY FIRING RATE (MILLION BTU/HR):
N/A	N/A	N/A

d) FUEL TYPE:

☐ NATURAL GAS ☐ FUEL OIL: GRADE NUMBER _____ ☐ COAL ☐ OTHER _____

IF MORE THAN ONE FUEL IS USED, ATTACH AN EXPLANATION AND LABEL AS EXHIBIT 220-2.

e) TYPICAL HEAT CONTENT OF FUEL (BTU/LB, BTU/GAL OR BTU/SCF):	f) TYPICAL SULFUR CONTENT (WT %., NA FOR NATURAL GAS):
g) TYPICAL ASH CONTENT (WT %., NA FOR NATURAL GAS):	h) ANNUAL FUEL USAGE (SPECIFY UNITS, E.G., SCF/YEAR, GAL/YEAR, TON/YEAR):

23) ARE COMBUSTION EMISSIONS DUCTED TO THE SAME STACK OR CONTROL AS PROCESS UNIT EMISSIONS? ☐ YES ☐ NO

IF NO, IDENTIFY THE EXHAUST POINT FOR COMBUSTION EMISSIONS:

APPLICABLE RULES

24) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., VOM, IAC 218.204(j)(4), 3.5 LBS/GAL):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)
VOM	35 IAC 218.302(b)	At least 85% recovery of total uncontrolled org. mat.
HAP	40CFR 63.362	99% reduction or 1 ppm outlet

25) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)
HAP	40 CFR 63.10	MACT recordkeeping and reporting

26) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)
HAP	40 CFR 63.10	MACT recordkeeping and reporting

27) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)
HAP	40CFR 63.364	Weekly Scrubber liquor level
	40CFR 63.364	Weekly EO concentration from dry beds

28) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT :

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)
HAP	40 CFR63.365	Testing of control equipment

29) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 220-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

30) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE -- ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

31) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

WB1 Scrubber 2 was tested January 23, 2003

32) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

WB1 Scrubber 2 is required to monitor scrubber liquor level weekly, pH weekly.
EO concentration is checked weekly to determine proper operation of the Dry Bed Unit.

TESTING, MONITORING, RECORDKEEPING AND REPORTING

33a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
EO conc	ppm	GLC from dry bed	weekly
Liquor level	inches	Operating data	weekly

33b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
EO conc	PM Records	General Manager	EH&S
Liquor Level	PM records	General Manager	EH&S

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

34a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

Monitor and record the level of the scrubber liquor in recirculation tank.
Monitor the EtO concentration entering and exiting the Dry Beds.

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., VOM EMISSIONS TO ATMOSPHERE)?

Level of scrubber liquor.
EtO levels from the Dry Beds.

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR 3 FEET FROM EXIT):

34d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

N/A

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

N/A

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☒ NO

IF NO, EXPLAIN:

No continuous monitoring is required.

35) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 220-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
1/21/03		Kremer Env.	Normal	> 99% efficiency

36) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
Excess emissions	Excess emissions	semi-annual

(37)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )				
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:						( )				
	TYPICAL:						( )				
OTHER, SPECIFY: _____	MAXIMUM:	See Ex.	220-a				( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-5.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

(38) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

☐ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE: [5]RATE OR STANDARD	ALLOWABLE BY RULE: APPLICABLE RULE
Ethylene Oxide	75-21-8	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
Propylene Oxide	75-56-9	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

39) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:
WB1 Scrubber #2 with dry bed

40) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.
Outside Stack

41) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):
approx 20 feet

42) DISCHARGE HEIGHT ABOVE GRADE (FT):
approx 30 feet

43) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):
Unknown

44) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA. 24 inches

	a) MAXIMUM (ACFM):	b) TYPICAL (ACFM):
45) EXIT GAS FLOW RATE	15,500	15,500
46) EXIT GAS TEMPERATURE	a) MAXIMUM (°F): approx 75	b) TYPICAL (°F): approx 75

47) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):
Vertical

48) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)	Aeration Rooms (current)	AR
b)	Sterilizer Backvent SC1, SC2, SC3, SC4	Backvent
c)	Backup for Sterlizer Chambers SC1-4	vacuum pump
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

49a) LATITUDE:	b) LONGITUDE:	
50) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation:
_____

PROCESS EMISSION UNIT DATA AND INFORMATION	***FOR AGENCY USE ONLY***
	ID NUMBER:
	EMISSION POINT #:
	DATE:

SOURCE INFORMATION	
1) SOURCE NAME: Sterigenics US, LLC	
2) DATE FORM PREPARED: 30 May 2018	3) SOURCE ID NO. (IF KNOWN): 043110AAC

GENERAL INFORMATION	
4) NAME OF EMISSION UNIT: Sterilization Chambers (3 thirteen pallet and 1 twenty-six pallet capacity) SC-4	
5) NAME OF PROCESS: Sterilization of medical products and spices	
6) DESCRIPTION OF PROCESS: Chemical Sterilization	
7) DESCRIPTION OF ITEM OR MATERIAL PRODUCED OR ACTIVITY ACCOMPLISHED: Sterilized Medical Supplies and Treated Spices	
8) FLOW DIAGRAM DESIGNATION OF EMISSION UNIT: Sterilizer Chambers	
9) MANUFACTURER OF EMISSION UNIT (IF KNOWN): Unknown	
10) MODEL NUMBER (IF KNOWN): unknown	11) SERIAL NUMBER (IF KNOWN): unknown
12) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EMISSION UNIT (ACTUAL OR PLANNED)	a) CONSTRUCTION (MONTH/YEAR): July 1999
	b) OPERATION (MONTH/YEAR): October 1999
	c) LATEST MODIFICATION (MONTH/YEAR): October 2012
13) DESCRIPTION OF MODIFICATION (IF APPLICABLE): The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber exhaust vent currently exhausts uncontrolled to atmosphere. This modification proposes to control the backvents with the existing WBII AAT scrubber and dry beds.	

FOR APPLICANT'S USE
_____

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14) DOES THE EMISSION UNIT HAVE MORE THAN ONE MODE OF OPERATION? ☒ YES ☐ NO

IF YES, EXPLAIN AND IDENTIFY WHICH MODE IS COVERED BY THIS FORM (NOTE: A SEPARATE PROCESS EMISSION UNIT FORM 220-CAAPP MUST BE COMPLETED FOR EACH MODE):

The sterilization chambers includes the chamber vent (via vacuum pump) and the chamber exhaust vent (backvent) as one emission unit. The chamber backvent modification is covered by this form. The chamber vent is also controlled by WBII AAT Scrubber and dry bed.

15) PROVIDE THE NAME AND DESIGNATION OF ALL AIR POLLUTION CONTROL EQUIPMENT CONTROLLING THIS EMISSION UNIT, IF APPLICABLE (FORM 260-CAAPP AND THE APPROPRIATE 260-CAAPP ADDENDUM FORM MUST BE COMPLETED FOR EACH ITEM OF AIR POLLUTION CONTROL EQUIPMENT):

The chamber backvent is currently uncontrolled. This application proposes to duct the chamber exhaust vent (backvent) to the existing WBII AAT Scrubber with Dry Bed Reactor. The information provided below is required for the existing control device.

16) WILL EMISSIONS DURING STARTUP EXCEED EITHER THE ALLOWABLE EMISSION RATE PURSUANT TO A SPECIFIC RULE, OR THE ALLOWABLE EMISSION LIMIT AS ESTABLISHED BY AN EXISTING OR PROPOSED PERMIT CONDITION? ☐ YES ☒ NO

IF YES, COMPLETE AND ATTACH FORM 203-CAAPP, "REQUEST TO OPERATE WITH EXCESS EMISSIONS DURING STARTUP OF EQUIPMENT".

17) PROVIDE ANY LIMITATIONS ON SOURCE OPERATION AFFECTING EMISSIONS OR ANY WORK PRACTICE STANDARDS (E.G., ONLY ONE UNIT IS OPERATED AT A TIME):

Usage limitations for total propylene oxide and ethylene oxide shall not exceed 40,800 pounds per month and 244200 pounds per year for all emission units in Willowbrook II.

OPERATING INFORMATION

18) ATTACH THE CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSION RELATED, FROM WHICH THE FOLLOWING OPERATING INFORMATION, MATERIAL USAGE INFORMATION AND FUEL USAGE DATA WERE BASED AND LABEL AS EXHIBIT 220-1. REFER TO SPECIAL NOTES OF FORM 202-CAAPP.

19a) MAXIMUM OPERATING HOURS 8760 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
b) TYPICAL OPERATING HOURS 8600 per year	HOURS/DAY: 24	DAYS/WEEK: 7	WEEKS/YEAR: 52	
20) ANNUAL THROUGHPUT	DEC-FEB(%): 25	MAR-MAY(%): 25	JUN-AUG(%): 25	SEP-NOV(%): 25

MATERIAL USAGE INFORMATION

	MAXIMUM RATES		TYPICAL RATES	
21a) RAW MATERIALS	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
EO and PO		122.1		

21b) PRODUCTS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

21c) BY-PRODUCT MATERIALS	MAXIMUM RATES		TYPICAL RATES	
	LBS/HR	TONS/YEAR	LBS/HR	TONS/YEAR
N/A				

FUEL USAGE DATA

22a) MAXIMUM FIRING RATE (MILLION BTU/HR):	b) TYPICAL FIRING RATE (MILLION BTU/HR):	c) DESIGN CAPACITY FIRING RATE (MILLION BTU/HR):
N/A	N/A	N/A

d) FUEL TYPE:

☐ NATURAL GAS ☐ FUEL OIL: GRADE NUMBER _____ ☐ COAL ☐ OTHER _____

IF MORE THAN ONE FUEL IS USED, ATTACH AN EXPLANATION AND LABEL AS EXHIBIT 220-2.

e) TYPICAL HEAT CONTENT OF FUEL (BTU/LB, BTU/GAL OR BTU/SCF):	f) TYPICAL SULFUR CONTENT (WT %., NA FOR NATURAL GAS):
g) TYPICAL ASH CONTENT (WT %., NA FOR NATURAL GAS):	h) ANNUAL FUEL USAGE (SPECIFY UNITS, E.G., SCF/YEAR, GAL/YEAR, TON/YEAR):

23) ARE COMBUSTION EMISSIONS DUCTED TO THE SAME STACK OR CONTROL AS PROCESS UNIT EMISSIONS? ☐ YES ☐ NO

IF NO, IDENTIFY THE EXHAUST POINT FOR COMBUSTION EMISSIONS:

APPLICABLE RULES

24) PROVIDE ANY SPECIFIC EMISSION STANDARD(S) AND LIMITATION(S) SET BY RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT (E.G., VOM, IAC 218.204(j)(4), 3.5 LBS/GAL):

REGULATED AIR POLLUTANT(S)	EMISSION STANDARD(S)	REQUIREMENT(S)
VOM	35 IAC 218.302(b)	At least 85% recovery of total uncontrolled org. mat.
HAP	40CFR 63.362	99% reduction
VOM	35 IAC218.986(a)	Capture & Control > 81%

25) PROVIDE ANY SPECIFIC RECORDKEEPING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	RECORDKEEPING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WBII AAT		

26) PROVIDE ANY SPECIFIC REPORTING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	REPORTING RULE(S)	REQUIREMENT(S)
Standards don't apply to backvent	40 CFR 63.10	MACT recordkeeping and reporting
but do apply to WBII AAT		

27) PROVIDE ANY SPECIFIC MONITORING RULE(S) WHICH ARE APPLICABLE TO THIS EMISSION UNIT:

REGULATED AIR POLLUTANT(S)	MONITORING RULE(S)	REQUIREMENT(S)
HAP monitoring applies to	40CFR 63.364	Weekly Scrubber liquor level
WBII AAT	40CFR 63.364	Weekly EO concentration from dry beds
		Weekly pH

28) PROVIDE ANY SPECIFIC TESTING RULES AND/OR PROCEDURES WHICH ARE APPLICABLE TO THIS EMISSION UNIT :

REGULATED AIR POLLUTANT(S)	TESTING RULE(S)	REQUIREMENT(S)
HAP applies to WBII AAT	40 CFR63.365	Testing of control equipment

29) DOES THE EMISSION UNIT QUALIFY FOR AN EXEMPTION FROM AN OTHERWISE APPLICABLE RULE? ☐ YES ☒ NO

IF YES, THEN LIST BOTH THE RULE FROM WHICH IT IS EXEMPT AND THE RULE WHICH ALLOWS THE EXEMPTION. PROVIDE A DETAILED EXPLANATION JUSTIFYING THE EXEMPTION. INCLUDE DETAILED SUPPORTING DATA AND CALCULATIONS. ATTACH AND LABEL AS EXHIBIT 220-3, OR REFER TO OTHER ATTACHMENT(S) WHICH ADDRESS AND JUSTIFY THIS EXEMPTION.

COMPLIANCE INFORMATION

30) IS THE EMISSION UNIT IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS? ☒ YES ☐ NO

IF NO, THEN FORM 294-CAAPP "COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE – ADDENDUM FOR NON COMPLYING EMISSION UNITS" MUST BE COMPLETED AND SUBMITTED WITH THIS APPLICATION.

31) EXPLANATION OF HOW INITIAL COMPLIANCE IS TO BE, OR WAS PREVIOUSLY, DEMONSTRATED:

Ethylene Oxide and Propylene oxide usage is tracked monthly.
WBII AAT was tested December 13, 2016

32) EXPLANATION OF HOW ONGOING COMPLIANCE WILL BE DEMONSTRATED:

Records of Ethylene Oxide (EO) and Propylene Oxide (PO) usage. (monthly)
WBII AAT is required to monitor scrubber liquor level weekly, pH weekly.
EO concentration is checked weekly to determine proper operation of the Dry Bed Unit.

TESTING, MONITORING, RECORDKEEPING AND REPORTING

33a) LIST THE PARAMETERS THAT RELATE TO AIR EMISSIONS FOR WHICH RECORDS ARE BEING MAINTAINED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE UNIT OF MEASUREMENT, THE METHOD OF MEASUREMENT, AND THE FREQUENCY OF SUCH RECORDS (E.G., HOURLY, DAILY, WEEKLY):

PARAMETER	UNIT OF MEASUREMENT	METHOD OF MEASUREMENT	FREQUENCY
Sterilant Usage	pounds	Operating data	monthly
Liquor level	inches	Operating data	weekly
EO conc	ppm	GLC from dry bed	weekly

33b) BRIEFLY DESCRIBE THE METHOD BY WHICH RECORDS WILL BE CREATED AND MAINTAINED. FOR EACH RECORDED PARAMETER INCLUDE THE METHOD OF RECORDKEEPING, TITLE OF PERSON RESPONSIBLE FOR RECORDKEEPING, AND TITLE OF PERSON TO CONTACT FOR REVIEW OF RECORDS:

PARAMETER	METHOD OF RECORDKEEPING	TITLE OF PERSON RESPONSIBLE	TITLE OF CONTACT PERSON
Sterilant usage	Operating report	General Manager	EH&S
Liquor Level	PM records	General Manager	EH&S
EO conc	PM Records	General Manager	EH&S

c) IS COMPLIANCE OF THE EMISSION UNIT READILY DEMONSTRATED BY REVIEW OF THE RECORDS? ☒ YES ☐ NO

IF NO, EXPLAIN:

d) ARE ALL RECORDS READILY AVAILABLE FOR INSPECTION, COPYING AND SUBMITTAL TO THE AGENCY UPON REQUEST? ☒ YES ☐ NO

IF NO, EXPLAIN:

34a) DESCRIBE ANY MONITORS OR MONITORING ACTIVITIES USED TO DETERMINE FEES, RULE APPLICABILITY OR COMPLIANCE:

Monitor and record the level of the scrubber liquor in recirculation tank.
Monitor the EtO concentration entering and exiting the AATDry Beds.

b) WHAT PARAMETER(S) IS(ARE) BEING MONITORED (E.G., VOM EMISSIONS TO ATMOSPHERE)?

Level of scrubber liquor.
EtO levels from the AAT Dry Beds.

c) DESCRIBE THE LOCATION OF EACH MONITOR (E.G., IN STACK MONITOR 3 FEET FROM EXIT):

34d) IS EACH MONITOR EQUIPPED WITH A RECORDING DEVICE? ☐ YES ☐ NO

IF NO, LIST ALL MONITORS WITHOUT A RECORDING DEVICE:

N/A

e) IS EACH MONITOR REVIEWED FOR ACCURACY ON AT LEAST A QUARTERLY BASIS? ☐ YES ☐ NO

IF NO, EXPLAIN:

N/A

f) IS EACH MONITOR OPERATED AT ALL TIMES THE ASSOCIATED EMISSION UNIT IS IN OPERATION? ☐ YES ☒ NO

IF NO, EXPLAIN:

No continuous monitoring is required.

35) PROVIDE INFORMATION ON THE MOST RECENT TESTS, IF ANY, IN WHICH THE RESULTS ARE USED FOR PURPOSES OF THE DETERMINATION OF FEES, RULE APPLICABILITY OR COMPLIANCE. INCLUDE THE TEST DATE, TEST METHOD USED, TESTING COMPANY, OPERATING CONDITIONS EXISTING DURING THE TEST AND A SUMMARY OF RESULTS. IF ADDITIONAL SPACE IS NEEDED, ATTACH AND LABEL AS EXHIBIT 220-4:

TEST DATE	TEST METHOD	TESTING COMPANY	OPERATING CONDITIONS	SUMMARY OF RESULTS
1/21/03		Kremer Env.	Normal	> 99% efficiency

36) DESCRIBE ALL REPORTING REQUIREMENTS AND PROVIDE THE TITLE AND FREQUENCY OF REPORT SUBMITTALS TO THE AGENCY:

REPORTING REQUIREMENTS	TITLE OF REPORT	FREQUENCY
Annual emissions report	Annual emissions report	annual
Excess emissions	Excess emissions	semi-annual

(37)EMISSION INFORMATION

REGULATED AIR POLLUTANT		☐ [1]ACTUAL EMISSION RATE ☐ [1]UNCONTROLLED EMISSION RATE					ALLOWABLE BY RULE EMISSION RATE			[2]PERMITTED EMISSION RATE	
		LBS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[3]OTHER TERMS	[4]DM	[5]RATE (UNITS)	APPLICABLE RULES	TONS PER YEAR (TONS/YR)	RATE (UNITS)	TONS PER YEAR (TONS/YR)
CARBON MONOXIDE (CO)	MAXIMUM:						( )				
	TYPICAL:						( )				
LEAD	MAXIMUM:						( )				
	TYPICAL:						( )				
NITROGEN OXIDES (NOx)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER (PART)	MAXIMUM:						( )				
	TYPICAL:						( )				
PARTICULATE MATTER <= 10 MICROMETERS (PM10)	MAXIMUM:						( )				
	TYPICAL:						( )				
SULFUR DIOXIDE (SO2)	MAXIMUM:						( )				
	TYPICAL:						( )				
VOLATILE ORGANIC MATERIAL (VOM)	MAXIMUM:						( )				
	TYPICAL:						( )				
OTHER, SPECIFY: _____	MAXIMUM:	See Ex.	220-a				( )				
	TYPICAL:						( )				
EXAMPLE: PARTICULATE MATTER	MAXIMUM:	*5.00*	*21.9*	*0.3 GR/DSCF*		*1*	*6.0 (LBS/HR)*	*212.321*	*26.28*	*5.5 LBS/HR*	*22*
	TYPICAL:	*4.00*	*14.4*	*0.24 GR/DSCF*		*4*	*5.5 (LBS/HR)*	*212.321*	*19.80*		

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-5.

[1]CHECK UNCONTROLLED EMISSION RATE BOX IF CONTROL EQUIPMENT IS USED, OTHERWISE CHECK AND PROVIDE THE ACTUAL EMISSION RATE TO ATMOSPHERE, INCLUDING INDOORS. SEE INSTRUCTIONS.
[2]PROVIDE THE EMISSION RATE THAT WILL BE USED AS A PERMIT SPECIAL CONDITION. THIS LIMIT WILL BE USED TO DETERMINE THE PERMIT FEE.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G. PPM, GR/DSCF, ETC.)
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS), 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS)
[5]RATE - ALLOWABLE EMISSION RATE SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

(38) HAZARDOUS AIR POLLUTANT EMISSION INFORMATION

☐ [1]ACTUAL EMISSION RATE
☐ [1]UNCONTROLLED EMISSION RATE

NAME OF HAP EMITTED	[2]CAS NUMBER		POUNDS PER HOUR (LBS/HR)	TONS PER YEAR (TONS/YR)	[3]OTHER TERMS	[4]DM	ALLOWABLE BY RULE: [5]RATE OR STANDARD	ALLOWABLE BY RULE: APPLICABLE RULE
Ethylene Oxide	75-21-8	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
Propylene Oxide	75-56-9	MAXIMUM:	See Exhibit	220-a				
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
		MAXIMUM:						
		TYPICAL:						
EXAMPLE:		MAXIMUM:	*10.0*	*1.2*		*2*	*98% by wt control device*	*CFR 61*
Benzene	*71432*	TYPICAL:	*8.0*	*0.8*		*2*	*leak-tight trucks*	*61.302(b),(d)*

IMPORTANT: ATTACH CALCULATIONS, TO THE EXTENT THEY ARE AIR EMISSIONS RELATED, ON WHICH EMISSIONS WERE DETERMINED AND LABEL AS EXHIBIT 220-6.

[1]PROVIDE UNCONTROLLED EMISSIONS IF CONTROL EQUIPMENT IS USED. OTHERWISE, PROVIDE ACTUAL EMISSIONS TO THE ATMOSPHERE, INCLUDING INDOORS. CHECK BOX TO SPECIFY.
[2]CAS - CHEMICAL ABSTRACT SERVICE NUMBER.
[3]PLEASE PROVIDE ANY OTHER EMISSION RATE WHICH IS COMMONLY USED, REQUIRED BY A SPECIFIC LIMITATION OR THAT WAS MEASURED (E.G., PPM, GR/DSCF, ETC.).
[4]DM - DETERMINATION METHOD: 1) STACK TEST, 2) MATERIAL BALANCE, 3) STANDARD EMISSION FACTOR (AP-42 OR AIRS, 4) ENGINEERING ESTIMATE, 5) SPECIAL EMISSION FACTOR (NOT AP-42 OR AIRS).
[5]RATE - ALLOWABLE EMISSION RATE OR STANDARD SPECIFIED BY MOST STRINGENT APPLICABLE RULE.

EXHAUST POINT INFORMATION

THIS SECTION SHOULD NOT BE COMPLETED IF EMISSIONS ARE EXHAUSTED THROUGH AIR POLLUTION CONTROL EQUIPMENT.

39) FLOW DIAGRAM DESIGNATION OF EXHAUST POINT:
WBII AAT Scrubber with dry bed

40) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.
Outside Stack

41) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):
approx 100 feet

42) DISCHARGE HEIGHT ABOVE GRADE (FT):
approx 32 feet

43) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):
Unknown

44) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA. 24 inches

45) EXIT GAS FLOW RATE	a) MAXIMUM (ACFM): 11,500	b) TYPICAL (ACFM): 11,500
46) EXIT GAS TEMPERATURE	a) MAXIMUM (°F): approx 75	b) TYPICAL (°F): approx 75

47) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):
Vertical

48) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

	NAME	FLOW DIAGRAM DESIGNATION
a)	WBII Aeration Rooms (current)	AR
b)	Sterilizer Backvent SC4	Backvent
c)	Sterlizer Chambers SC4 (current)	vacuum pump
d)		
e)		

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

49a) LATITUDE:	b) LONGITUDE:	
50) UTM ZONE:	b) UTM VERTICAL (KM):	c) UTM HORIZONTAL (KM):

EXHIBIT 220-A

2017 Emission Calculations for Commercial Sterilization Chambers at Sterigenics US LLC Willowbrook

2017 Usage		Willowbrook I	Willowbrook II	Willowbrook I & II
Ethylene Oxide (EO) Usage:	lbs/yr	284,077	139635	423,712
Propylene Oxide (PO) Usage:	lbs/yr	0	0	0

2017 Emissions for Willowbrook I and II	EO Uncontrolled Emissions lb/yr	PO Uncontrolled Emissions lb/yr	Required Control Efficiency	EO Controlled Emissions lb/yr	PO Controlled Emissions lb/yr
Sterilizer Vacuum Pump Emissions (95%)	402526.4	0.0	99.00%	4025.3	0.0
Sterilizer Back Vent Emissions (1%)	4237.1	0.0	0	4237.1	0.0
Aeration Emissions (4%)	16948.5	0.0	99.00%	169.5	0.0
Total	423712	0		8431.9	0.0

2017 HAP/VOM Controlled Emissions	8432	lb/yr
	4.22	tons/yr

Based on required Control Efficiencies

Assumptions:

1. 95% of all emissions are drawn off in the sterilization chamber.
2. 1% of all emissions are drawn off in the back vent.
3. 4% of all emissions are drawn off in the aeration room.
4. The scrubbers destruction efficiency is required to be a minimum of 99.0% for each scrubber system
5. Previous performance testing of each scrubber demonstrated control efficiencies of at least 99.9%.
6. Willowbrook I includes SC-1, 2, 3, and 5. Willowbrook II includes SC-4.
7. Boiler emissions are not included.

EXHIBIT 220-B

Potential To Emit for Commercial Sterilization Chambers at Sterigenics US LLC in Willowbrook, IL

Maximum Permitted Usage		WB I	WB II	WB I & II[5]
Ethylene Oxide Permitted Usage:	lbs/yr	840000	244200	1084200
Propylene Oxide Permitted Usage:	lbs/yr	33600		33600
Total HAP and VOM Usage:	lbs/yr	873600	244200	1117800

		Current Potential to Emit Calculation			Proposed Potential to Emit Calculation	
		HAP Uncontrolled Emissions lb/yr	Currently Required Control Efficiency	HAP Controlled Emissions lb/yr	Proposed Required Control Efficiency	HAP Controlled Emissions lb/yr
Willowbrook 1 (SC-1, SC-2, SC-3, SC-5)	Sterilizer Vacuum Pump Emissions (95%)	829920	99.00%	8299.2	99.0%	8299.2
	Sterilizer Back Vent Emissions (1%)	8736	0	8736.0	99.0%	87.4
	Aeration Emissions (4%)	34944	99.00%	349.4	99.0%	349.4
Willowbrook 2 (SC-4)	Sterilizer Vacuum Pump Emissions (95%)	231990	99.00%	2319.9	99.0%	2319.9
	Sterilizer Back Vent Emissions (1%)	2442	0	2442.0	99.0%	24.4
	Aeration Emissions (4%)	9768	99.00%	97.7	99.0%	97.7

Potential to Emit of HAP and VOM	Existing		New	
Willowbrook 1 Sterilization	17384.6	lb/yr	8736.0	lb/yr
Willowbrook 2 Sterilization	4859.6	lb/yr	2442.00	lb/yr
Total for Willowbrook Sterilization	22244.2	lb/yr	11178.0	lb/yr
	11.1	tons/yr	5.6	tons/yr

Notes

*Ethylene Oxide and Propylene Oxide are HAPs and VOMs

1. 95% of all emissions are drawn off in the sterilization chamber.
2. 1% of all emissions are drawn off in the back vent.
3. 4% of all emissions are drawn off in the aeration room.
4. The scrubbers destruction minimum efficiency is 99.0% for each scrubber system (40 CFR Part 63 Subpart O)
5. Assume combined WBII usage limit is for EO for calculations
6. Boiler emissions are not included.

EXHIBIT 220-C

Proposed Permit Limits for Commercial Sterilization Chambers at Sterigenics US LLC in Willowbrook, IL

STERILIZATION USAGE LIMITATIONS

	Current Permit Limits			Proposed Limits (No Change)		
	EO	PO	VOM	EO	PO	VOM
Usage	lb/month	lb/month	tons/year	lb/month	lb/month	tons/year
Willowbrook 1 SC-1, 2, 3, 5	70000	2800		70000	2800	
Willowbrook 2 SC-4	40800		122.1	40800		122.1

STERILIZATION EMISSION LIMITATIONS

	Proposed Limits (Same as PTE)		
VOM Emissions (tons/year)	Vacuum Pump	BackVent	Aeration
Willowbrook 1 SC-1, 2, 3, 5	4.15	0.044	0.175
Willowbrook 2 SC-4	1.16	0.01	0.05

	Current Permitted Emission limits			Construction
Willowbrook 1	lb/hr	Tons/month	tons/year	Permit #
VOM West Aeration Emissions	3.60		15.77	90080038
Willowbrook 2				
VOM Vauum pump Emission		0.2	1.16	11050010
VOM Back vent Emissions		0.21	1.22	11050010
VOM Total Emissions		0.41	2.38	11050010
VOM Aeration Emissions			0.05	11050010

Note

* Boiler emissions are not included.

Illinois Environmental Protection Agency

Bureau of Air • 1021 North Grand Avenue East • P.O. Box 19506 • Springfield • Illinois • 62794-9506

FEE DETERMINATION FOR CONSTRUCTION PERMIT APPLICATION

FOR AGENCY USE ONLY

ID Number: _____ Permit #: _____

☐ Complete ☐ Incomplete Date Complete: _____

Check Number: _____ Account Name: _____

This form is to be used to supply fee information that must accompany all construction permit applications. This application must include payment in full to be deemed complete. Make check or money order payable to the Illinois Environmental Protection Agency, Division of Air Pollution Control - Permit Section at the above address. Do NOT send cash. Refer to instructions (197-INST) for assistance.

Source Information

1. Source Name: Sterigenics US, LLC
2. Project Name: Back Vent Emissions Control
3. Source ID #: (if applicable) 043110AAC
4. Contact Name: Laura Hartman
5. Contact Phone #: 630-928-1724

Fee Determination

6. The boxes below are automatically calculated.

Section 1 Subtotal $0.00 + Section 2, 3 or 4 Subtotal $500.00 = $500.00 Grand Total

Section 1: Status of Source/Purpose of Submittal

7. Your application will fall under only one of the following five categories described below. Check the box that applies. Proceed to applicable sections. For purposes of this form:

- **Major Source** is a source that is required to obtain a CAAPP permit.
- **Synthetic Minor Source** is a source that has taken limits on potential to emit in a permit to avoid CAAPP permit requirements (e.g.,FESOP).
- **Non-Major Source** is a source that is not a major or synthetic minor source.

☑ Existing source without status change or with status change from synthetic minor to major source or vice versa. Proceed to Section 2.

☐ Existing non-major source that will become synthetic minor to major source. Proceed to Section 4.

☐ New major or synthetic minor source. Proceed to Section 4.

☐ New non-major source. Proceed to Section 3.

☐ AGENCY ERROR. If this is a timely request to correct an issued permit that involves only an agency error and if the request is received within the deadline for a permit appeal to the Pollution Control Board. Skip Sections 2, 3 and 4. Proceed directly to Section 5.

$0.00 Section 1 Subtotal

This agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 ET SEQ. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Section 2: Special Case Filing Fee

8. **Filing Fee.** If the application only addresses one or more of the following, check the appropriate boxes, skip Sections 3 and 4 and proceed directly to Section 5. Otherwise, proceed to Section 3 or 4 as appropriate.

☑ Addition or replacement of control devices on permitted units.

☐ Pilot projects/trial burns by a permitted unit

☐ Land remediation projects

☐ Revisions related to methodology or timing for emission testing

☐ Minor administrative-type change to a permit

$500.00

Section 3: Fees for Current or Projected Non-Major Sources

9. This application consists of a single new emission unit or no more than two modified emission units. ($500 fee)

10. This application consists of more than one new emission unit or more than two modified units. ($1,000 fee)

11. This application consists of a new source or emission unit subject to Section 39.2 of the Act (i.e., Local Siting Review); a commercial incinerator or a municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or an emission unit designated as a complex source by agency rulemaking. ($15,000 fee)

12. A public hearing is held (see instructions). ($10,000 fee)

13. Section 3 subtotal. (lines 9 through 12 - entered on page 1) 13. $0.00

Section 4: Fees for Current or Projected Major or Synthetic Minor Sources

Application contains modified emission units only	14. For the first modified emission unit, enter $2,000.	
	15. Number of additional modified emission units = x $1,000.	
	16. Line 14 plus line 15, or $5,000, whichever is less.	16. $0.00
Application contains new and/or modified emission units	17. For the first new emission unit, enter $4,000.	
	18. Number of additional new and/or modified emission units = x $1,000.	
	19. Line 17 plus line 18, or $10,000, whichever is less.	19. $0.00
Application contains netting exercise	20. Number of individual pollutants that rely on a netting exercise or contemporaneous emissions decrease to avoid application of PSD or nonattainment area NSR = x $3,000.	20. $0.00
Additional Supplemental Fees	21. If the new source or emission unit is subject to Section 39.2 of the Act (i.e. siting); a commercial incinerator or other municipal waste, hazardous waste, or waste tire incinerator; a commercial power generator; or one or more other emission units designated as a complex source by Agency rulemaking, enter $25,000.	
	22. If the source is a new major source subject to PSD, enter $12,000.	
	23. If the project is a major modification subject to PSD, enter $6,000.	
	24. If this is a new major source subject to nonattainment area (NAA) NSR, enter $20,000.	
	25. If this is a major modification subject to NAA NSR, enter $12,000.	
	26. If the application involves a determination of MACT for a pollutant and the project is not subject to BACT or LAER for the related pollutant under PSD or NSR (e.g., VOM for organic HAP), enter $5,000 per unit for which a determination is requested or otherwise required. x $5,000.	26. $0.00
	27. If a public hearing is held (see instructions), enter $10,000.	
28. Section 4 subtotal (line 16 and lines 19 through 28) to be entered on page1		28. $0.00

Section 5: Certification

NOTE: Applications without a signed certification will be deemed incomplete.

29. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the information contained in this fee application form is true, accurate and complete.

by: Laura Hartman
Signature

Manager, EH&S
Title of Signatory

Laura Hartman
Typed or Printed Name of Signatory

05 June 2018
Date